

WHAT IS CLAIMED IS:

1. A reference voltage generating circuit comprising:
 - a first constant current circuit having a positive temperature characteristic and outputting a first constant current;
 - a second constant current circuit having a negative temperature characteristic and outputting a second constant current;
 - 5 a current synthesizing circuit synthesizing said first constant current and said second constant current to generate a third constant current, said first and second constant currents being synthesized at a ratio which allows a temperature characteristic of said third constant current to be within a range between said positive temperature characteristic and said negative temperature characteristic; and
 - 10 a current-voltage converting circuit converting said third constant current into a voltage to generate a reference voltage.
2. The reference voltage generating circuit according to claim 1, wherein
 - said current synthesizing circuit includes
 - a first transistor connected with said first constant current circuit to
 - 5 form a current mirror and thereby generate a fourth constant current which is a product of said first constant current and a first factor,
 - a second transistor connected with said second constant current circuit to form a current mirror and thereby generate a fifth constant current which is a product of said second constant current and a second factor and
 - 10 a third transistor receiving said third constant current to which said fourth constant current and said fifth constant current are added.
3. The reference voltage generating circuit according to claim 2, wherein
 - a ratio between the channel width and the channel length of said first and second transistors each can be changed.

4. The reference voltage generating circuit according to claim 1,
wherein

5 said current-voltage converting circuit includes
a transistor connected with said current synthesizing circuit to form
a current mirror and thereby receive said third constant current,
a variable-resistance element having a small temperature
dependency compared with said positive and negative temperature
characteristic and converting said third constant current into a first voltage,
and
10 a reference voltage terminal outputting said first voltage as said
reference voltage.

5. The reference voltage generating circuit according to claim 1,
wherein

5 said current-voltage converting circuit includes
a bias voltage generating unit generating a bias voltage,
a variable-resistance element having a small temperature
dependency compared with said positive and negative temperature
characteristic and converting said third constant current into a first voltage,
and
10 a reference voltage terminal outputting, as said reference voltage, a
second voltage produced by adding said first voltage to said bias voltage.

6. The reference voltage generating circuit according to claim 1,
wherein

5 said current-voltage converting circuit includes
a bias voltage generating unit generating a bias voltage,
a variable-resistance element having a small temperature
dependency compared with said positive and negative temperature
characteristic and converting said third constant current into a first voltage
and
10 a reference voltage terminal outputting, as said reference voltage, a
third voltage produced by subtracting said first voltage from said bias

voltage.

7. The reference voltage generating circuit according to claim 1,
wherein

5 said current-voltage converting circuit includes
 a bias voltage generating unit generating a bias voltage,
 a variable-resistance element having a small temperature
dependency compared with said positive and negative temperature
characteristic and converting said third constant current into a first voltage,
 a selecting unit selecting, according to a control signal, one of a
second voltage produced by adding said first voltage to said bias voltage and
10 a third voltage produced by subtracting said first voltage from said bias
voltage, and
 a reference voltage terminal outputting, as said reference voltage,
said second or third voltage selected by said selecting unit.